

Appl. No.: 10/798,626  
Amendment Dated September 21, 2005  
Reply to Office Action of June 22, 2005

LUN-102US

**Amendments to the Claims:** This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A method for treating contaminated soil and water comprising the steps of:

a) preparing a stable dispersion of zero-valent iron particles having a maximum size of 10  $\mu$ m in an aqueous solution containing a dispersant being one of block or graft copolymers containing both anchoring and stabilizing chains; and

b) subjecting said dispersion to one of a grinding or milling operation to produce a solution containing said zero-valent iron particles having an average size less than 100 nanometers; and

bc) applying said zero valent iron dispersion to said contaminated soil and water.

2. (Cancelled)

<sup>2</sup>  
~~2.~~ (Currently Amended) A method according to claim ~~2-1~~ including the step of using one of sodium polymethacrylate or ammonium polymethacrylate as a dispersant to stabilize said ~~colloidal~~ suspension containing zero valent iron particles.

<sup>3</sup>  
~~3.~~ (Currently Amended) A composition for treating contaminants in soil or water consisting of:

a ~~stabilized colloidal suspension~~ of zero valent iron particles stabilized by one of a block or graft copolymer containing both anchoring and stabilizing chains wherein said zero valent iron particles have an average size less than 100 nanometers.

5. (Cancelled)

<sup>4</sup>  
~~4.~~ (Currently Amended) A composition according to claim ~~5-4~~ <sup>3</sup> including less than 1 to 2% by weight of one of ammonium polymethacrylate and/or sodium polymethacrylate as a stabilizer for said suspension.

<sup>5</sup>  
~~5.~~ (Original) A composition according to claim ~~4~~ <sup>3</sup> wherein said suspension includes up to 30% by wt iron particles.

<sup>6</sup>  
~~6.~~ (Currently Amended) A method for preparing a suspension of zero-valent iron particles comprising the steps of:

preparing a stabilized dispersant of iron particles having a size no larger than 10  $\mu$ m by introducing one of a block or graft copolymer containing both anchoring and stabilizing chains into said dispersant as a stabilizer having a size no larger than 10  $\mu$ m; and

grinding or milling said stabilized dispersant for a time sufficient to reduce the size of the zero valent iron particles to a maximum size of 100 nm.

9. (Cancelled)

<sup>7</sup>10. (Currently Amended) A method according to claim <sup>6</sup>~~9-8~~ including the step of introducing one of sodium polymethacrylate or ammonium polymethacrylate into said dispersant as said stabilizer.

<sup>8</sup>11. (Original) A method according to claim <sup>7</sup>~~10~~ including the step of using from 1 to 2% by weight of said ammonium polymethacrylate or said sodium polymethacrylate to produce said stabilized dispersant.

<sup>9</sup>12. (Original) A method according to claim <sup>7</sup>~~10~~ including the step of using up to 30% by weight iron particles.